**DEPARTMENT OF TRANSPORTATION**
DIVISION OF ENGINEERING SERVICES
Office of Structural Materials
Quality Assurance and Source Inspection

Bay Area Branch
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Contract #: 04-0120F4
Cty: SF/ALA Rte: 80 PM: 13.2/13.9
File #: 13.28

# WELDING INSPECTION REPORT

**Resident Engineer:** Pursell, Gary
**Address:** 333 Burma Road
**City:** Oakland, CA 94607

**Report No:** WIR-005273
**Date Inspected:** 28-Jan-2009

**Project Name:** SAS Superstructure
**Prime Contractor:** American Bridge/Fluor Enterprises, a JV
**Contractor:** Oregon Iron Works Clackamas, Or.

**OSM Arrival Time:** 1300
**OSM Departure Time:** 2100
**Location:** Clackamas, Oregon

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|---|---|---|---|---|---|---|---|---|
| **CWI Name:** | See below | | | **CWI Present:** | ☑ Yes | ☐ No | |
| **Inspected CWI report:** | ☐ Yes | ☑ No | ☐ N/A | **Rod Oven in Use:** | ☐ Yes | ☐ No | ☑ N/A |
| **Electrode to specification:** | ☑ Yes | ☐ No | ☐ N/A | **Weld Procedures Followed:** | ☑ Yes | ☐ No | ☐ N/A |
| **Qualified Welders:** | ☑ Yes | ☐ No | ☐ N/A | **Verified Joint Fit-up:** | ☐ Yes | ☑ No | ☐ N/A |
| **Approved Drawings:** | ☑ Yes | ☐ No | ☐ N/A | **Approved WPS:** | ☑ Yes | ☐ No | ☐ N/A |
| | | | | **Delayed / Cancelled:** | ☐ Yes | ☑ No | ☐ N/A |

**Bridge No:** 34-0006
**Component:** Hinge K Pipe Beams

**Summary of Items Observed:**

On this date, Caltrans Quality Assurance Inspector (QA) Sherri Brannon is present at the Oregon Iron Works, Inc. (OIW) jobsite in Clackamas, Oregon for the purpose of observing fabrication of the Hinge K Pipe Beams.

OIW Fabrication Shop-Bay 2 (Heat Straightening):
QA Inspector Brannon randomly observed OIW qualified welder Mr. Rick Hinkle ID#H49 performing heat straightening at weld joint #W3-01D hinge k pipe beam fuse section A124-4. Mr. Hinkle was observed using a temperature indicator of 1050°F to insure that the heat straightening process did not exceed 1100 °F. Cause for heat straightening due to the rolling process of the HPS 485 W 100mm in thickness and welding distortion. Heat straightening is performed by flame straightening using a portable torch mounted on a portable motor using guided tracks. Heat straightening randomly observed by QA Inspector Brannon appeared to comply with OIW's Upset Shortening Procedure (Heat Straightening) Procedure SP-006 revision 2.
NOTE #1: QA Inspector Brannon also, observed Mr. Hinkle heat straightening in the center of the weld joint. QC Inspector Mike Gregson informed QA Inspector Brannon the OIW will perform ultrasonic testing (UT) 72 hours after heat straightening has been completed.
NOTE #2: Heat straightening not completed on this date.

OIW Fabrication Shop-Bay 3:
QA Inspector Brannon randomly observed OIW qualified welder Mr. Craig Jacobson ID#J6 welding a joining ring stiffener plate MK#b112 (HPS 485 W) to hinge K pipe beam A111-4 (A508 Gr. 4N Class 2). The partial joint penetration (PJP) weld is identified as weld joint #W2-11. Mr. Jacobson was observed welding in the 1G (flat) position utilizing submerged arc welding (SAW) process with a 2.4mm diameter electrode, filler metal brand

Lincoln Electric LA85 class F9A4-Enis-G-H2l. QA Inspector Brannon observed the OIW QC CWI Inspector's Mr. Mike Gregson, Mr. Rob Walters and Mr. Jose Salazar verifying that the pre-heat and welding parameters were in accordance with the Welding Procedure Specification (WPS). Welding parameters observed by QA Inspector Brannon appear to be in general compliance with the approved WPS 4016 revision number 0.

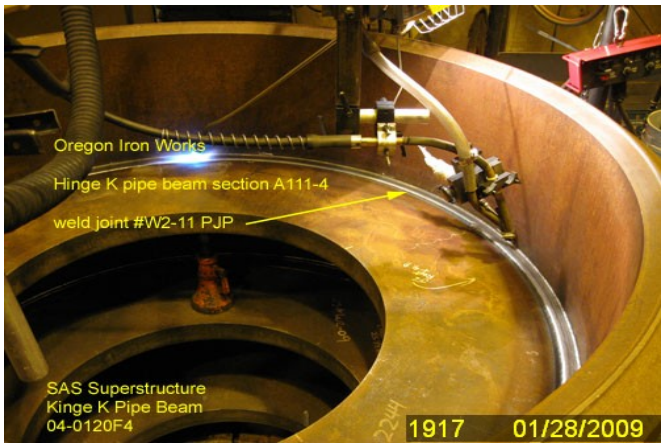
QA Inspector Brannon randomly observed OIW personnel air carbon arc gouging the back side of a complete joint penetration weld for hinge K pipe beam A111-3 (A508 Gr. 4N Class 2) weld joint #W2-6. In preparation for the fill and cover passes utilizing a submerged arc welding (SAW) process. OIW personnel was also, observed using a power grinder with a sanding dick to remove the remaining carbon and burn slag. QA Inspector Brannon observed OIW QC CWI Inspector's Mr. Mike Gregson, Mr. Rob Walters and Mr. Jose Salazar periodically monitoring this excavation.

Later in the shift, QA Inspector Brannon randomly observed OIW qualified welder Mr. Mikhail Bannikov ID#B28 welding a joining ring stiffener plate MK#b112 (HPS 485 W) to pipe beam A111-4 (A508 Gr. 4N Class 2). The partial joint penetration (PJP) weld is identified as weld joint #W2-11. Mr. Bannikov was observed welding in the 1G (flat) position utilizing submerged arc welding (SAW) process with a 2.4mm diameter electrode, filler metal brand Lincoln Electric LA85 class F9A4-Enis-G-H2l. QA Inspector Brannon observed the OIW QC CWI Inspector's Mr. Gary Mundt and Mr. Steve Barnett verifying that the pre-heat and welding parameters were in accordance with the Welding Procedure Specification (WPS). Welding parameters observed by QA Inspector Brannon appear to be in general compliance with the approved WPS 4016 revision number 0.

OIW Non-Destructive Testing:
QA Inspector Brannon observed QC Inspector Mr. Rob Walters perform Magnetic Particle Testing (MT) on the root pass at weld joint #W3-11 partial joint penetration single bevel groove weld for hinge K pipe beam section A111-4. Mr. Walters stated to QA Inspector Brannon that he did not observe any relevant indication.

Material, Equipment, and Labor Tracking:
QA Inspector Brannon performed a verification of personnel at OIW. QA Inspector Brannon observed 2 Supervisors, 5 Quality Control and 4 production personnel on this date.

The following digital photograph below illustrates observation of the activities being performed.



# WELDING INSPECTION REPORT

*( Continued Page 3 of 3 )*

**Summary of Conversations:**

As noted within this report.

**Comments**

This report is for the purpose of determining conformance with the contract documents and is not for the purpose of making repair or fit for purpose recommendations. Should you require recommendations concerning repairs or remedial efforts please contact Mohammad Fatemi (916) 813-3677, who represents the Office of Structural Materials for your project.

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| **Inspected By:** | Brannon,Sherri | Quality Assurance Inspector |
| **Reviewed By:** | Adame,Joe | QA Reviewer |